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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,243

02/06/2004

John G. Carman

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8954

7590

06/11/2008

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EXAMINER

ROBINSON, KEITH O NEAL

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

06/11/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/772,243	<b>Applicant(s)</b> CARMAN, JOHN G.	
	<b>Examiner</b> KEITH O. ROBINSON	<b>Art Unit</b> 1638	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 13-18 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-18 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 26, 2008 has been entered and the arguments in the amendment previously filed on November 28, 2007 have been considered. However, Applicant's amendments introduced new matter, as stated below.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10, 13-18 and 29-36 are under examination.

### ***Claim Rejections - 35 USC § 112, first paragraph – Written Description***

Claims 1, 13 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are broadly drawn to a method of producing an angiospermous apomictic plant that exhibits an increased genetic stability for apomixis compared to an apomictic parent plant from which the apomictic plant is produced, the method

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comprising: (a) producing a facultatively apomictic parent plant by:  
selecting sexual plants from an angiospermous plant species, genus, or family, wherein the sexual plants are selected from Antennaria, Sorghum or Tripsacum; cytoembryologically ascertaining the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, integument, pericarp, hypanthium, or pistil wall for each of the selected plants;

choosing a first and a second plant based on the cytoembryologically ascertained developmental timing of the nongametophytic ovule and ovary tissues, wherein the initiation of embryo sac formation of the first plant is at the same time or before meiosis in the second plant;

hybridizing the first plant with the second plant identified sexual plants;

recovering hybrid seed therefrom;

sowing the hybrid seed; and

selecting a hybrid plant that is apomictic to be the apomictic parent plant;

and (b) doubling the chromosome number of the apomictic parent plant, thereby producing an angiospermous apomictic plant with increased genetic stability for apomixis.

There does not appear to be support in the specification for “ascertaining the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, pericarp, hypanthium, or pistil wall for each of the selected plants;

choosing a first and a second plant based on the cytoembryologically ascertained developmental timing of the nongametophytic ovule and ovary tissues, wherein the

initiation of embryo sac formation of the first plant is at the same time or before meiosis in the second plant;

hybridizing the first plant with the second plant”.

Accordingly, the claims are directed to NEW MATTER.

***Response to Arguments***

***Claim Rejections - 35 USC § 103***

Claims 1-10, 13-18 and 29-36 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Bashaw (Apomixis in crop improvement. *In* Hybridization of crop plants. 1980. pages 45-63), in view of Savidan (Crop Sci. 22: 467-469, 1982), further in view of Dujardin et al (Euphytica 38: 229-235, 1988). The rejection is repeated for the reasons of record as set forth in the Office Action mailed June 28, 2007 (see pages 3-6). Applicant's arguments, filed November 28, 2007, have been fully considered but are not persuasive.

Applicant argues that Bashaw fails to teach or suggest the critical steps of the claimed invention; the critical steps being (a) cytoembryologically ascertaining the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, integument, pericarp, hypanthium, or pistil wall for each of the selected plants; (b) choosing a first and a second plant based on the cytoembryologically ascertained developmental timing of the nongametophytic ovule and ovary tissues, wherein the initiation of embryo sac formation of the first plant is at the same time or before meiosis in the second plant; and (c) hybridizing the first plant with the second plant and that

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Bashaw also fails to teach apomixes production with respect to *Antennaria*, *Sorghum* or *Tripsacum* (see page 8, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs of 'Remarks' filed November 28, 2007).

This is not persuasive. Savidan teaches cytoembryologically ascertaining the sexual reproduction of selected plants (see, for example, page 468, Table 2 where it teaches embryological analysis of apomictic hybrids between sexual and apomictic plants). Savidan does not teach the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, integument, pericarp, hypanthium, or pistil wall for each of the selected plants; however, as stated above, this is not taught in the instant specification.

In addition, Bashaw teaches hybridizing sexual plants with apomictic plants (see, for example, page 59, Figure 3).

Applicant argues that Savidan fails to remedy the deficiencies of Bashaw (see page 9, 1st paragraph of 'Remarks' filed November 28, 2007).

This is not persuasive. Savidan does remedy the deficiency of cytoembryological identification of apomictic hybrids between sexual and apomictic plants (see, for example, page 468, Table 2). Savidan does not teach the developmental timing of the nongametophytic ovule and ovary tissues consisting of the nucellus, integument, pericarp, hypanthium, or pistil wall for each of the selected plants; however, as stated above, this is not taught in the instant specification.

Applicant argues that Dujardin fails to remedy the deficiencies of both Bashaw and Savidan (see page 9, 2nd paragraph of 'Remarks' filed November 28, 2007).

This is not persuasive. As neither Bashaw nor Savidan teach chromosome doubling of apomictic plants, this is remedied by the teachings of Dujardin. Dujardin et al teach the chromosome doubling of apomictic plants (see page 234, Figure 3). In addition, Dujardin et al teach that a chromosome doubled plant "should [be] useful as a pollinator on tetraploid pearl millet to produce chromosome substitution lines for the purpose of developing apomictic pearl millet" (see page 234, 2nd column, lines 5-10). One of ordinary skill in the art would understand that the teachings of Dujardin et al could be used to produce other apomictic plants.

Applicant argues that there is no motivation in any of the cited references to modify the method of Bashaw (see page 9, last paragraph to page 10, lines 1-3 of 'Remarks' filed November 28, 2007).

This is not persuasive. KSR forecloses the argument that a specific teaching, suggestion or motivation is required to support a finding of obviousness. See the recent Board decision *Ex parte Smith*, -- USPQ2d --, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (citing KSR, 82 USPQ2d at 1396).

### ***Conclusion***

No claims are allowed.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH O. ROBINSON whose telephone number is (571)272-2918. The examiner can normally be reached Monday – Friday, 7:30 a.m. - 4:30 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Keith O. Robinson, Ph.D.  
Examiner  
Art Unit 1638  
/David H Kruse/  
Primary Examiner, Art Unit 1638  
June 6, 2008